

CLAIMS

1. A mobile information processor comprising:
communication means for performing data communication
5 with an external apparatus;
storage means for storing mobile directory information
including information of nearby apparatuses; and
control means for collecting information of accessible
nearby apparatuses and updating the mobile directory
10 information stored in the storage means based on the
collected information.

2. The mobile information processor according to Claim
1, wherein the control means receives the information of the
15 nearby apparatuses from a space directory (SDR) which stores
the information of the nearby apparatuses, and updates the
mobile directory information stored in the storage means.

3. The mobile information processor according to Claim
20 1, wherein the control means receives the information of the
nearby apparatuses from a space directory (SDR) which stores
the information of the nearby apparatuses, while, in
response to a transmission challenge from the space
directory (SDR), the control means transmits encrypted data
25 of the challenge created by its own secret key together with

a public-key certificate to the space directory.

4. The mobile information processor according to Claim
1, wherein the communication means performs Bluetooth
5 wireless communication.

5. The mobile information processor according to Claim
1, wherein the control means periodically collects the
information of the accessible nearby apparatuses.

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6. The mobile information processor according to Claim
1, wherein the control means communicates with a personal
directory (PDR) which stores original data of the mobile
directory information through communication relay means
15 included in the nearby apparatuses, and registers the
position of the mobile information processor in the personal
directory (PDR).

7. An information processor comprising:
20 communication means for performing data communication
with an external apparatus;

storage means for storing original information of
mobile directory information; and

control means for receiving a service request from the
25 external apparatus through the communication means and

providing at least part of the original information as
mobile directory information to the external apparatus.

8. The information processor according to Claim 7,
5 wherein the control means registers position information of
the external apparatus.

9. An information processor comprising:
communication means for performing data communication
10 with an external apparatus;
storage means for storing information of information
processors in a local area; and
control means for receiving a service request from the
external apparatus through the communication means and
15 providing a service to the external apparatus based on the
information of the information processors.

10. The information processor according to Claim 9,
wherein the control means transmits the information of the
20 information processors about nearby apparatuses stored in
the storage means to the external apparatus.

11. The information processor according to Claim 9,
wherein, before transmitting the information of the
25 information processors about nearby apparatuses stored in

the storage means to the external apparatus, the control means performs authentication processing by challenge response, that is, the control means performs challenge transmission and receives encrypted data of the challenge transmission created by a secret key of the external apparatus and a public-key certificate as a response from the external apparatus.

12. The information processor according to Claim 9, wherein the communication means performs Bluetooth wireless communication.

13. A data communication system comprising:
a mobile apparatus storing mobile directory information; and
a personal directory (PDR) which stores original information of the mobile directory information and which receives a service request from the mobile apparatus through a network and provides a service to the mobile apparatus according to the service request.

14. The data communication system according to Claim 13, further comprising:
a service provider,
wherein the service provider provides a service based

on information obtained from the personal directory (PDR).

15. The data communication system according to Claim 13, further comprising:

5 a space directory server which stores information of information processors in a local area,

wherein the space directory server receives a service request including information of nearby apparatuses included in the mobile directory information from the mobile
10 apparatus and provides a service through the nearby apparatus.

16. The data communication system according to Claim 15, wherein the service providing process is performed
15 through a service provider.

17. A method of obtaining information of nearby apparatuses by using a mobile information processor, the method comprising:

20 a step of accessing a space directory (SDR) which stores the information of the nearby apparatuses;

a step of transmitting, in response to a transmission challenge from the space directory (SDR), encrypted data of the challenge created by its own secret key together with a
25 public-key certificate to the space directory;

a step of receiving the information of the nearby
apparatuses from the space directory (SDR); and

a step of storing the received information in storage
means as mobile directory information.

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18. The method according to Claim 17, further
comprising:

a step of communicating with a personal directory (PDR)
which stores original data of the mobile directory
10 information so as to register position information of the
mobile information processor in the personal directory (PDR).

19. A data communication method comprising:

a step of obtaining information of nearby apparatuses
15 as information of information processors in a local area and
storing the obtained information in storage means as mobile
directory information, the step being performed by a mobile
apparatus; and

a step of transmitting a service request including the
20 information of the nearby apparatuses included in the mobile
directory information from the mobile apparatus to a
personal directory (PDR), which stores original data of the
mobile directory information, so that the personal directory
provides a service through the nearby apparatus.

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20. The data communication method according to Claim
19, wherein the information of the nearby apparatuses is
obtained from a space directory server (SDR) which stores
the information of information processors as nearby
5 apparatuses.

21. The data communication method according to Claim
19, wherein the service request is transmitted through a
service provider.

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22. A data communication method comprising:

a step of obtaining information of nearby apparatuses
as information of information processors in a local area
directly from the information processor and storing the
15 obtained information in storage means as mobile directory
information, the step being performed by a mobile apparatus;
and

a step of receiving a service request including the
information of the nearby apparatuses included in the mobile
20 directory information from the mobile apparatus, the step
being performed by a personal directory (PDR) which stores
original data of the mobile directory information, so that
the personal directory provides a service through the nearby
apparatus.

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23. The data communication method according to Claim 22, wherein the service request is received through a service provider.

5 24. A computer program for allowing a mobile information processor to execute a process of obtaining information of nearby apparatuses, the process being performed in a computer system, the program comprising:

- 10 a step of accessing a space directory (SDR) which stores the information of the nearby apparatuses;
- a step of transmitting, in response to a transmission challenge from the space directory (SDR), encrypted data of the challenge created by its own secret key together with a public-key certificate to the space directory;
- 15 a step of receiving the information of the nearby apparatuses from the space directory (SDR); and
- a step of storing the received information in storage means as mobile directory information.

20 25. A computer program for allowing a mobile information processor to execute a process of obtaining information of nearby apparatuses, the process being performed in a computer system, the program comprising:

- 25 a step of accessing an information processor which stores apparatus information;

a step of transmitting, in response to a transmission challenge from the information processor, encrypted data of the challenge created by its own secret key together with a public-key certificate to the information processor;

5 a step of receiving the apparatus information from the information processor; and

a step of storing the received information in storage means as mobile directory information.